

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

PTO FORM 1449

MAY 10 2005

Atty. Docket No.  
**02885/77**

Serial No.  
10/764,159

Applicant(s)  
Vorbach et al.

Filing Date  
January 23, 2004

Group Art Unit  
2186

\*U. S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT/TRADEMARK/PUBLICATION NUMBER	PATENT/ PUBLICATION DATE	NAME	CLASS	SUBCLASS	FILING DATE
SE	2,067,477	January 12, 1937	J.B. Cooper	74	466	—
SE	3,242,998	March 29, 1966	C.H. Gubbins	173	217	—
SE	3,681,578	August 1, 1972	Stevens	714	11	—
SE	3,757,608	September 11, 1973	Willner	475	347	—
SE	3,855,577	December 17, 1974	Vandierendonck	713	324	—
SE	4,498,172	February 5, 1985	Bhavsar	714	732	—
SE	4,566,102	January 21, 1986	Hefner	714	7	—
SE	4,663,706	May 5, 1987	James et al.	709	234	—
SE	4,682,284	July 21, 1987	Schrofer	710	55	—
SE	4,720,780	January 19, 1988	Dolecek	712	18	—
SE	4,852,043	July 25, 1989	Guest	710	300	—
SE	4,891,810	January 2, 1990	de Corlieu et al.	714	11	—
SE	4,910,665	March 20, 1990	Mattheyses et al.	712	15	—
SE	5,047,924	September 10, 1991	Matsubara et al.	713	501	—
SE	5,065,308	November 12, 1991	Evans	714	11	—
SE	5,072,178	December 10, 1991	Matsumoto	714	724	—
SE	5,144,166	September 1, 1992	Camarota et al.	326	41	—
SE	5,193,202	March 9, 1993	Lee et al.	718	100	—
SE	5,203,005	April 13, 1993	Horst	712	15	—
SE	5,274,593	December 28, 1993	Proebsting	365	200	—
SE	5,301,284	April 5, 1994	Estes et al.	711	203	—
SE	5,347,639	September 13, 1994	Rechtschaffen et al.	712	203	—
SE	5,349,193	September 20, 1994	Mott et al.	250	370.06	—
SE	5,353,432	October 4, 1994	Richek et al.	710	10	—
SE	5,379,444	January 3, 1995	Mumme	712	11	—
SE	5,410,723	April 25, 1995	Schmidt et al.	712	18	—
SE	5,425,036	June 13, 1995	Liu et al.	371	23	—
SE	5,428,526	June 27, 1995	Flood et al.	700	12	—
SE	5,465,375	November 7, 1995	Thepaut et al.	712	15	—
SE	5,475,856	December 12, 1995	Kogge	712	20	—
SE	5,530,873	June 25, 1996	Takano	710	260	—
SE	5,530,946	June 25, 1996	Bouvier et al.	714	23	—
SE	5,574,930	November 12, 1996	Halverson Jr. et al.	712	34	—
SE	5,600,265	February 4, 1997	El Gamal Abbas et al.	326	41	—
SE	5,600,845	February 4, 1997	Gilson	712	39	—
SE	5,625,806	April 29, 1997	Kromer	713	501	—
SE	5,649,176	July 15, 1997	Selvidge et al.	713	400	—
SE	5,649,179	July 15, 1997	Steenstra et al.	712	248	—
SE	5,655,069	August 5, 1997	Ogawara et al.	714	10	—
SE	5,657,330	August 12, 1997	Matsumoto	714	733	—
SE	5,675,743	October 7, 1997	Mavity	710	100	—

EXAMINER'S INITIALS	PATENT/PUBLICATION NUMBER	PATENT/PUBLICATION DATE	NAME	CLASS	SUBCLASS	FILING DATE
SE	5,680,583	October 21, 1997	Kuijsten	703	23	—
SE	5,732,209	March 24, 1998	Vigil et al.	714	30	—
SE	5,754,827	May 19, 1998	Barbier et al.	703	14	—
SE	5,760,602	June 2, 1998	Tan	326	38	—
SE	5,773,994	June 30, 1998	Jones	326	41	—
SE	5,784,636	July 21, 1998	Rupp	712	37	—
SE	5,794,059	August 11, 1998	Barker et al.	712	10	—
SE	5,794,062	August 11, 1998	Baxter	712	30	—
SE	5,802,290	September 1, 1998	Casselman	709	201	—
SE	5,828,229	October 27, 1998	Cliff et al.	326	40	—
SE	5,848,238	December 8, 1998	Shimomura et al.	714	49	—
SE	5,854,918	December 29, 1998	Baxter	713	500	—
SE	5,859,544	January 12, 1999	Norman	326	40	—
SE	5,865,239	February 2, 1999	Carr	164	98	—
SE	5,867,723	February 2, 1999	Peters et al.	712	11	—
SE	5,884,075	March 16, 1999	Hester et al.	713	100	—
SE	5,887,162	March 23, 1999	Williams et al.	713	1	—
SE	5,889,982	March 30, 1999	Rodgers et al.	712	229	—
SE	5,892,370	April 6, 1999	Eaton et al.	326	39	—
SE	5,901,279	May 4, 1999	Davis III	714	3	—
SE	5,924,119	July 13, 1999	Sindhu et al.	711	141	—
SE	5,966,534	October 12, 1999	Cooke et al.	717	155	—
SE	5,970,254	October 19, 1999	Cooke et al.	712	37	—
SE	6,011,407	January 4, 2000	New	326	39	—
SE	6,023,742	February 8, 2000	Ebeling et al.	710	107	—
SE	6,034,538	March 7, 2000	Abramovici	326	38	1-98
SE	6,038,656	March 14, 2000	Cummings et al.	712	211	1-98
SE	6,047,115	April 4, 2000	Mohan et al.	712	211	9-98
SE	6,049,222	April 11, 2000	Lawman	326	38	12-97
SE	6,085,317	July 4, 2000	Smith	713	1	8-97
SE	6,092,174	July 18, 2000	Roussakov	712	15	6-98
SE	6,105,105	August 15, 2000	Trimberger et al.	711	103	5-99
SE	6,125,408	September 26, 2000	McGee et al.	710	8	3-97
SE	6,172,520	January 9, 2001	Lawman et al.	326	38	2-99
SE	6,202,182	March 13, 2001	Abramovici et al.	714	725	6-98
SE	6,219,833	April 17, 2001	Solomon et al.	717	5	12-98
SE	6,230,307	May 8, 2001	Davis et al.	716	16	1-99
SE	6,243,808	June 5, 2001	Wang	712	300	3-99
SE	6,260,179	July 10, 2001	Ohsawa et al.	716	5	5-98
SE	6,263,430	July 17, 2001	Trimberger et al.	713	1	7-99
SE	6,279,077	August 21, 2001	Nasserbakht et al.	711	118	3-97
SE	6,282,627	August 28, 2001	Wong et al.	712	15	5-00
SE	6,288,566	September 11, 2001	Hanrahan et al.	326	38	9-99
SE	6,289,440	September 11, 2001	Casselman	712	227	7-99
SE	6,298,472	October 2, 2001	Phillips et al.	716	18	5-99
SE	6,311,200	October 30, 2001	Hanrahan et al.	708	232	9-99

EXAMINER'S INITIALS	PATENT/PUBLICATION NUMBER	PATENT/PUBLICATION DATE	NAME	CLASS	SUBCLASS	FILING DATE
SE	6,321,366	November 20, 2001	Tseng et al.	716	6	8-98
SE	6,321,373	November 20, 2001	Ekanadham et al	717	1	10-99
SE	6,338,106	January 8, 2002	Vorbach et al.	710	100	6-99
SE	6,341,318	January 22, 2002	Dakhil	710	23	8-99
SE	6,347,346	February 12, 2002	Taylor	710	23	6-99
SE	6,349,346	February 19, 2002	Hanrahan et al.	710	9	9-99
SE	6,370,596	April 9, 2002	Dakhil	710	15	8-99
SE	6,378,068	April 23, 2002	Foster et al.	713	1	6-95
SE	6,389,379	May 14, 2002	Lin et al.	703	14	6-98
SE	6,389,579	May 14, 2002	Phillips et al.	716	6	1-99
SE	6,392,912	May 21, 2002	Hanrahan et al.	365	63	1-01
SE	6,405,299	June 11, 2002	Vorbach et al.	712	11	8-98
SE	6,421,817	July 16, 2002	Mohan et al.	716	16	4-00
SE	6,425,068	July 23, 2002	Vorbach et al.	712	18	10-97
SE	6,457,116	September 24, 2002	Mirsky et al.	712	16	5-99
SE	6,477,643	November 5, 2002	Vorbach et al.	713	100	7-00
SE	6,480,937	November 12, 2002	Vorbach et al.	711	122	9-99
SE	6,480,954	November 12, 2002	Trimberger et al.	713	1	6-01
SE	6,513,077	January 28, 2003	Vorbach et al.	710	100	7-01
SE	6,519,674	February 11, 2003	Lam et al.	711	103	2-00
SE	6,526,520	February 25, 2003	Vorbach et al.	713	600	3-00
SE	6,538,468	March 25, 2003	Moore	326	40	7-00
SE	6,539,477	March 25, 2003	Seawright	713	100	3-00
SE	6,542,998	April 1, 2003	Vorbach et al.	713	400	8-99
SE	6,571,381	May 27, 2003	Vorbach et al.	716	16	9-99
SE	6,657,457	December 2, 2003	Hanrahan et al.	326	41	3-00
SE	6,587,939	July 1, 2003	Takano	712	210	1-00
SE	6,687,788	February 3, 2004	Vorbach et al.	711	122	7-02
SE	6,697,979	February 24, 2003	Vorbach et al.	714	724	6-00
SE	6,728,871	April 27, 2004	Vorbach et al.	712	226	6-99
SE	2002/0038414	March 28, 2002	Taylor et al.	711	217	9-01
SE	2002/0045952	April 18, 2002	Blemel	700	2	10-01
SE	2002/0143505	October 3, 2002	Drusinsky	703	2	4-01
SE	2002/0144229	October 3, 2002	Hanrahan	716	17	4-01
SE	2002/0165886	November 7, 2002	Lam	708	209	11-01
SE	2003/0123579	July 3, 2003	Safavi et al.	375	341	11-02
SE	2003/0014743	January 16, 2003	Cooke et al.	717	161	6-98
SE	2003/0046607	March 6, 2003	Vorbach	714	25	9-01
SE	2003/0052711	March 20, 2003	Taylor et al.	326	38	9-01
SE	2003/0055861	March 20, 2003	Lai et al.	708	620	9-01
SE	2003/0056085	March 2, 2003	Vorbach	712	32	5-02
SE	2003/0056091	March 20, 2003	Greenberg	713	100	9-01
SE	2003/0056202	March 20, 2003	Vorbach	713	136	9-01
SE	2003/0093662	May 15, 2003	Vorbach et al.	713	100	10-02
SE	2003/0097513	May 22, 2003	Vorbach et al.	375	341	11-02
SE	2003/0135686	July 17, 2003	Vorbach et al.	710	317	4-02
SE	2004/0015899	January 22, 2004	May et al.	717	140	9-01

EXAMINER'S INITIALS.	PATENT/PUBLICATION NUMBER	PATENT/PUBLICATION DATE	NAME	CLASS	SUBCLASS	FILING DATE
SE	2004/0025005	February 5, 2004	Vorbach et al.	713	100	6-01
SE	2004/0168099	August 26, 2004	Vorbach et al	713	600	3-04

**FOREIGN PATENT DOCUMENTS**

EXAMINER'S INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
						YES NO
SE	0 477 809	April 1, 1992	Europe	G06F	11/20	✓
SE	0 628 917	December 14, 1994	Europe	G06F	15/16	✓
SE	0 726 532	July 2, 1998	Europe	G06F	15/80	✓
SE	0 835 685	October 2, 1996	Europe	B01J	20/32	✓
SE	0 926 594	June 30, 1999	Europe	G06F	9/45	✓
SE	1 102 674	July 13, 1999	Europe	B29C	47/10	X
SE	42 21 278	January 5, 1994	Germany	G06F	15/16	Abst.
SE	38 55 673	November 20, 1997	Germany	G06F	15/16	Ab.
SE	100-28-397	December-20, 2001	Germany			
SE	100 36 627	February 14, 2002	Germany	H01L	27/118	Abst.
SE	101 29 237	April 18, 2002	Germany	G06F	9/45	Abst.
SE	102 04 044	August 14, 2003	Germany	H05B	41/285	Abst.
SE	196 54 593	July 2, 1998	Germany	G11C	16/02	Abst.
SE	197 04 044	August 13, 1998	Germany	G06F	9/44	Abst.
SE	197 04 742	September 24, 1998	Germany	G06F	13/38	Abst.
SE	198 07 872	August 26, 1999	Germany	G06F	15/80	Abst.
SE	198 61 088	February 10, 2000	Germany	H01L	27/118	Abst.
SE	199 26 538	December 14, 2000	Germany	G06F	15/80	Ab.
SE	WO98/26356	June-18, 1998		PCT		
SE	WO98/28697	July-2, 1998		PCT		
SE	WO98/29952	July-9, 1998		PCT		
SE	WO98/31102	July-16, 1998		PCT		
SE	WO98/35299	August-13, 1998		PCT		
SE	WO99/32975	July 1, 1999		PCT		
SE	WO99/40522	August 12, 1999		PCT		
SE	WO99/44147	September 2, 1999		PCT	G06F	15/76
SE	WO99/44120	September 2, 1999		PCT	G06F	9/00
SE	WO00/17771	March 30, 2000		PCT	G06F	15/78
SE	WO00/77652	December 21, 2000		PCT	G06F	15/00
SE	WO02/13000	February 14, 2002		PCT	G06F	9/00
SE	WO02/21010	March 14, 2002		PCT	F16D	65/21
SE	WO02/29600	April 11, 2002		PCT		
SE	WO02/71248	September 12, 2002		PCT	G06F	15/80
SE	WO02/71249	September 12, 2002		PCT	G06F	15/80
SE	WO02/103532	December 27, 2002		PCT	G06F	13/28
SE	WO03/17095	February 27, 2003		PCT	G06F	9/445
SE	WO03/23616	March 30, 2003		PCT	G06F	11/26
SE	WO03/25781	March 27, 2003		PCT	G06F	15/76
SE	WO03/32975	April 24, 2003		PCT	A61K	31/195
SE	WO03/36507	May 1, 2003		PCT	G06F	15/76

2  
192  
ENGLISH

## OTHER DOCUMENTS

AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.

EXAMINER'S INITIALS	Ade et al., "Minimum Memory Buffers in DSP Applications," Electronics Letters, vol. 30, No. 6, March 17, 1994, pp. 469-471
SE	Alippi et al., "Determining the Optimum Extended Instruction Set Architecture for Application Specific Reconfigurable VLIW CPUs, IEEE, 2001, pp. 50-56
SE	Arabi et al., "PLD Integrates Dedicated High-speed Data Buffering, Complex State Machine, and Fast Decode Array," conference record on WESCON '93, Sep. 28, 1993, pp. 432-436
SE	Athanas P. "A Functional Reconfigurable Architecture and Compiler for Adaptive Computing," IEEE, pages 49-55.
SE	Athanas, et al., "An Adaptive Hardware Machine Architecture and Compiler for Dynamic Processor Reconfiguration", IEEE, Laboratory for Engineering Man/Machine Systems Division of Engineering, Box D, Brown University Providence, Rhode Island, 1991, pages 397-400
SE	Baumgarte et al., PACT XPP "A Self-reconfigurable Data Processing Architecture," PACT Info. GMBH, Munchen Germany 2001
SE	Becker et al., "Parallelization in Co-compilation for Configurable Accelerators - a Host/accelerator Partitioning Compilation Method," proceedings of Asia and South Pacific Design Automation Conference, Yokohama, Japan, February 10-13, 1998
SE	Bittner, R. A. Jr., "Wormhole Run-time Reconfiguration: Conceptualization and VLSI Design of a High Performance Computing System," Dissertation, January 23, 1997, pp. I-XX, 1-415
SE	Callahan, T. et al. "The Garp Architerchture and C Copiler," Computer, April 2000, pages 62-69.
SE	Cardoso "Compilation of Java™ Algorithms onto Reconfigurable Computing Systems with Exploitation of Operation-Level Parallelism," Ph.D. Thesis, Universidade Tecnica de Lisboa (UTL), Lisbon, Portugal October 2000 (English Abstract included)
SE	Diniz et al., "Automatic Synthesis of Data Storage and Control Structures for FPGA-based Computing Engines", 2000, IEEE, pages 91-100
SE	Donandt, "Improving Response Time of Programmable Logic Controllers by Use of a Boolean Coprocessor", AEG Research Institute Berlin, IEEE, 1989, pages 4-167 - 4-169.
SE	Dutt et al., "If Software is King for Systems-on-Silicon, What's New in Compiler", IEEE, 1997, pp. 322-325
SE	Ferrante J. et al., "The Program Dependence Graph and its Use in Optimization ACM Transactions on Programming Languages and Systems," July 1987, USA, [online] Bd. 9, Nr., 3, pages 319-349, XP002156651 ISSN: 0164-0935 ACM Digital Library
SE	Fineberg et al., "Experimental Analysis of a Mixed-Mode Parallel Architecture Using Bitonic Sequence Sorting", Vol. 11. No. 3, March 1991, pages 239-251
SE	Fornaciari, W. Et al., System-level power evaluation metrics, 1997 Proceedings of the 2nd Annual IEEE International Conference on Innovative Systems in Silicon, New York, NY, October 1997, pp. 323-330.
SE	Forstner "Wer Zuerst Kommt, Mahlt Zuerst!: Teil 3: Einsatzgebiete und Anwendungsbeispiele von FIFO-Speichern", Elektronik, August 2000, pages 104-109 (NOT IN ENGLISH)
SE	Gokhale M. B. et al., "Automatic Allocation of Arrays to Memories in FPGA processors with Multiple Memory Banks", Field-Programmable Custom Computing Machines, 1999, IEEE, pages 63-67
SE	Hammes et al., "Cameron: High Level Language Compilation for Reconfigurable Systems," Department of Computer Science, Colorado State University, Conference on Parallel Architectures and Compilation Techniques, October 12-16, 1999
SE	Hauser et al., "Garp: A MIPS Processor with a Reconfigurable Coprocessor", University of California, Berkeley, IEEE, 1997, pages 12-21
SE	Hedge, "3D WASP Devices for On-line Signal and Data Processing, 1994, International Conference on Wafer Scale Integration, pages 11-21
SE	Hwang L. et al., "Min-cut Replication in Partitioned Networks" IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, [online] Bd. 14, Nr. 1, January 1995, pages 96-106, XP00053228 USA ISSN: 0278-0070 IEEE Xplore
SE	Iseli et al. "A C++ Compiler for FPGA Custom Execution Units Synthesis," IEEE. 1995, pp. 173-179
SE	Isshiki et al., "Bit-Serial Pipeline Synthesis for Multi-FPGA Systems with C++ Design Capture," 1996 IEEE, pp. 38-47
SE	Jacob et al., "Memory Interfacing and Instruction Specification for Reconfigurable Processors", ACM 1999, pages 145-154
SE	Jantsch et al., "A Case Study on Hardware/software Partitioning," Royal Institute of Technology, Kista, Sweden, April 10, 1994 IEEE, pp. 111-118
SE	John et al., "A Dynamically Reconfigurable Interconnect for Array Processors", Vol. 6, No. 1, March 1998, IEEE,

	pages 150-157
SE	Koch, A. et al, "Practical Experiences with the SPARXIL Co-Processor", 1998, IEEE, pages 394 - 398
SE	Kung, "Deadlock Avoidance for Systolic Communication", 1988 Conference Proceedings of 15 <sup>th</sup> Annual International Symposium on Computer Architecture, May 30, 1988, pp. 252-260
SE	Ling "WASMI: An MPLD with Data-Driven Control on a Virtual Hardware," Journal of Supercomputing, Kluwer Academic Publishers, Dordrecht, Netherlands, 1995, pp.253-276.
SE	Miller et al., "High-Speed FIFOs Contend with Widely Differing Data Rates: Dual-port RAM Buffer and Dual-pointer System Provide Rapid, High-density Data Storage and Reduce Overhead", Computer Design, September 1, 1985, pages 83-86.
SC	Mirsky "MATRIX: A Reconfigurable Computing Architecture with Configurable Instruction Distribution and Deployable Resources," Proceedings of the IEEE Symposium on FPGAs for Custom Computing Machines, 1996, PP. 157-166 • type
	Piotrowski "IEC-BUS, Die Funktionsweise des IEC-Bus und seine Anwendung in Geräten und Systemen", 1987, Franzis-Verlag GmbH, München, pp. 20-25 (NOT IN ENGLISH)
SE	Schmit, H. Et al., Hidden Markov Modeling and Fuzzy Controllers in FPGAs, FPGAs for Custom Computing Machines, 1995; Proceedings, IEEE Symposium on Napa Valley, CA, April 1995, pp. 214-221.
SE	Shirazi et al., "Quantitative analysis of floating point arithmetic on FPGA based custom computing machines," IEEE Symposium on FPGAs For Custom Computing Machines, IEEE Computer Society Press, April 19-21, 1995, pp. 155-162
	Siemers, "Rechenfabrik Ansaetze Fuer Extrem Parallele Prozessoren", Verlag Heinze Heise GmbH., Hannover, DE No. 15, July 16, 2001, pages 170-179 (NOT IN ENGLISH)
SE	Simunic, T. Et al., Source Code Optimization and Profiling of Energy Consumption in Embedded Systems, Proceedings of the 13th International Symposium on System Synthesis, September 2000, pp. 193-198.
SE	Tau, et al., "A First Generation DPGA Implementation," FPD'95, pp. 138-143
SE	Tenca et al., "A Variable Long-Precision Arithmetic Unit Design for Reconfigurable Coprocessor Architectures", University of California, Los Angeles, 1998, pages 216 - 225.
SE	The XPP White Paper, Release 2.1, PACT - A Technical Perspective, March 27, 2002, pages 1-27.
SE	TMS320C54X DSP: CPU and Peripherals, Texas Instruments, 1996, pp. 6-26 to 6-46
SE	TMS320C54x DSP: Mnemonic Instruction Set, Texas Instruments, 1996, p. 4-64
SE	Villasensor et al., "Express Letters Video Communications Using Rapidly Reconfigurable Hardware," IEEE Transactions on Circuits and Systems for Video Technology, IEEE, Inc. NY, December 1995, pp. 565-567
	Weinhardt "Übersetzsmethoden fur strukturprogrammierbare rechner," Dissertation for Doktors der Ingenieurwissenschaften der Universität Karlsruhe, July 1, 1997 (Compilation Methods for Structure programmable Computers", dissertation, ISBN 3-89722-011-3, 1997) (NOT IN ENGLISH)
SE	Weinhardt et al., "Pipeline Vectorization for Reconfigurable Systems", 1999, IEEE, pages 52-60
SE	XILINX, "Logic Cell Array Families: XC4000, XC4000A and XC4000H", product description, pages 2-7 to 2-15, Additional XC3000, XC31000 and XC3100A Data, pages 8-16 and 9-14
SE	Xu et al., "Parallel QR Factorization on a Block Data Flow Architecture" Conference Proceeding Article, March 1, 1992, pages 332-336 XPO10255276, PAGE 333, Abstract 2.2, 2.3, 2.4 - page 334
SE	Ye et al., "A Compiler for a Processor With A Reconfigurable Functional Unit," FPGA 2000 ACM/SIGNA International Symposium on Field Programmable Gate Arrays, Monterey, CA Feb. 9-11, 2000, pp. 95-100
SE	Zhang, N. Et al., Architectural Evaluation of Flexible Digital Signal Processing for Wireless Receivers, Signals, Systems and Computers, 2000; Conference Record of the Thirty-Fourth Asilomar Conference, Bd.1, 29 October 2000, pp. 78-83.

EXAMINER

*S. Elmon*

DATE CONSIDERED

8-10-2005

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*Copies of the U.S. Patent and U.S. Publication References are not provided pursuant to Official Gazette notice dated August 5, 2003.